This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) An ellipsometer for optically inspecting a subject, the apparatus comprising:

a source for generating an electromagnetic probe beam having a known polarization state;

an objective lens for focusing the probe beam on the surface of the subject, the objective lens also collecting the probe beam after it has been reflected by the subject;

a rotating compensator for inducing phase retardations in the polarization state of the probe beam;

an analyzer positioned to interact with the probe beam;

a detector for measuring the intensity of the probe beam after the interaction with the analyzer, said detector being subdivided to provide eight coefficients for measuring the retardation δ_B and the azimuth angle Q_B of the objective lens ; [[and]]

a processor for evaluating the sample based on the outputs of the detector, the processor configured to perform a harmonic analysis on the output signal from the detector to determine normalized Fourier coefficients corresponding to 2ω and 4ω components that are included in the output signal;

use the Fourier coefficients to measure the retardation δ_B and the azimuth angle Q_B of the objective lens; and

use the retardation δ_B and the azimuth angle Q_B to measure and eliminate the ellipsometric effects of the objective lens.

Claims 2-3. (cancelled)

4. (original) An ellipsometer comprising:

a light source for generating a probe beam of radiation

an optical element for focusing the probe beam substantially normal to the surface of the sample such that various rays within the focused probe beam create a spread of angles of incidence;

a rotating compensator for retarding the phase of one polarization state in the probe beam with respect to the phase of the other polarization state in the probe beam;

a polarizer for creating interference between the two polarization states in the probe beam after the probe beam has been reflected from the surface of the sample;

a quadrant detector for measuring the power of the reflected probe beam after it has passed through the retarding and polarizing means, each said quadrant of the detector generating an output that integrates the intensity of various rays having different angles of incidence, and

a processor for analyzing the output of the four quadrants based on measurements taken when the compensator is in two different azimuthal positions in order to determine the changes in the phase in the probe beam induced by the focusing optical element.

5. (new) An ellipsometer for evaluating a sample comprising:

a light source for generating a monochromatic, polarized probe beam;

optics for directing the probe beam normal to the sample surface;

an objective for focusing the probe beam onto the sample surface in a manner to create a spread of angles of incidence, said objective also collecting the probe beam after it has been reflected by the sample;

a photodetector positioned to monitor the probe beam after reflection from the sample and having detecting regions for generating separate output signals along at least two orthogonal axes;

an analyzer positioned between the sample and the photodetector;

a compensator positioned between the light source and the analyzer with one of said analyzer and compensator being rotatable; and

a processor for evaluating characteristics of the sample based on the output signals with said evaluation including accounting for the polarization effects induced by the objective.

6. (new) An ellipsometer as recited in claim 5, wherein said processor accounts for the polarization effects induced by the objective by treating the objective as an equivalent waveplate having a particular azimuthal angle and retardation value.

7. (new) An ellipsometer as recited in claim 5, wherein the photodetector is a quad cell.

8. (new) An ellipsometer as recited in claim 5, wherein the photodetector includes a two dimensional array of photodetector elements.

9. (new) An ellipsometer as recited in claim 5, wherein the output signals along one axis are compared to the output signals along the remaining axis in order to account for the polarization effects induced by the objective.

10. (new) An ellipsometer as recited in claim 5, wherein the compensator is moved between two orthogonal positions to obtain to separate measurements.

11. (new) A method of evaluating a sample comprising the steps of:

focusing a polarized monochromatic probe beam onto the surface of a sample with an objective in a manner to create a spread of angles of incidence;

collecting the probe beam after reflection from the sample with the objective;

measuring the collected probe beam with a detector that generates output signals along two orthogonal axes, said measuring step being performed after the probe beam passes through a compensator and an analyzer;

changing the azimuthal angle of one of the compensator and analyzer to obtain a second measurement; and

evaluating the sample based on the output signals, said evaluation step including accounting for the polarization effects induced by the objective.

12. (new) A method as recited in claim 11, wherein the objective is treated as an equivalent waveplate at a particular azimuthal angle and retardation value.

13. (new) A method as recited in claim 11, wherein the photodetector is a quad cell.

14. (new) A method as recited in claim 11, wherein the photodetector includes an two dimensional array of photodetector elements.

15. (new) A method as recited in claim 11, wherein the output signals along one axis are compared to the output signals along the remaining axis in order to account for the polarization effects induced by the objective.

16. (new) A method as recited in claim 11, wherein the azimuthal angle of the compensator is changed between two orthogonal positions to obtain the two measurements.